Results: The final cohort included 2,228 participants (1,424 women 804 men, with a mean age of 49±15). The echocardiographic prevalence of MVP was 0.36%. The prevalence of MVP was 0.35% in female (n=5) and 0.37% in male (n=3) patients. The mean age of patients with MVP was 39±10.7 years (22-53). Four patients (50%) had prolapse of the anterior leaflet, 1 (12.5%) had prolapse of the posterior leaflet and 2 (25%) had prolapse of both anterior and posterior leaflet. Only one patient had mild mitral regurgitation on color Doppler echocardiography. Baseline demographic and clinical characteristics of patients; 1 (12.5%) had hypertension, 3 (37.5%) had depression, 1 (12.5%) had migraine, 1 (12.5%) had diabetes mellitus, 1 (12.5%) had diastolic dysfunction, 3 (37.5%) had nodular goiter, 2 (25%) had hyperthyroidism. During the follow-up of 36 months, no major adverse events occurred.
Conclusion: This finding suggests that the prevalence of MVP was lower than previously studies and there might be a relationship between MVP and goiter, and depression.

OP-019

Depression and Cardiovascular Risk Factors in Pit Miners

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Intoduction: A connection between cardiovascular diseases and metabolic syndrome with depression has been proven. The goal of the research is to determine the prevalence of depression in coalmine pit miners in Banovici, presence and grouping of cardiovascular risk factors in depressed miners, and the impact of depression on overall cardiovascular risk.
Material-Methods: The study has been conducted on 492 workers at the mine pit. For each of them the score for depression has been determined according to the Beck's scale, and the blood pressure has been measured, as well as BMI, waist, total cholesterol, HDL and LDL cholesterol, triglycerides, blood sugar; and smoking status has been determined. The metabolic syndrome has been defined according to the criteria of the National Educational program about cholesterol - the third panel on the treatment of adults (NCEP ATP III). According to SCORE scoring system, the overall 10-year cardiovascular risk on the respondents has been determined.
Results: Out of 492 respondents 34.34% of them have depression. All measured risk factors other than waist size are more common among depressed miners. There was a statistically significant difference in age (p=0.003), smoking status (p=0.02) and the value of blood pressure (p=0.0001) in depressed miners. Metabolic syndrome was present in 44.97% of depressed miners in whom there was a greater overall cardiovascular risk (4 (0-20), p=0,0001. Among respondents, in the groups with and without depression, most of them have combined 5 risk factors, but among depressed individuals 21.3% of them have 6, and 11.83% of them have 7 risk factors, while in the group without depression 14,86% is with 6 factors and 6,19% with 7 risk factors.
Conclusion: There is a high prevalence of developing depression with emphasized tendency of grouping of risk factors, a higher presence of the metabolic syndrome and higher total cardiovascular risk among depressed miners.

Cardiac Imaging

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OP-020

Automated Functional Imaging in Atrioventricular Delay Time Optimization in Patients with Dual Chamber Pacemakers

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Background: Optimization of atrioventricular (AV) delay time has positive effects on left ventricular functions in patients with DDD pacemaker. Although echocardiographic methods are still the most commonly used ones for the optimization of AV delay time, the gold standard method used for optimization is still debated. Automated functional imaging (AFI) is a strain calculation method, that is based on speckle tracking technique and it makes strain calculation faster and easier. In our study, we aimed to evaluate the effect of different AV delay times on left ventricle (LV) systolic and diastolic functions by using brain natriuretic peptide (BNP) levels, pulse wave Doppler (PWD) echocardiography and AFI in patients with DDD pacemaker and preserved LV systolic function.
Methods: The study population consisted of 40 patients with DDD pacemaker implanted for third degree AV block and preserved left ventricular systolic function (19 men and 21 women; mean age 64,3±10,9 years). Patients with implantable cardioverter defibrillator (ICD), biventricular pacemaker, LV systolic dysfunction (ejection fraction <%50), other moderate or severe organ failure (e.g. chronic liver disease, renal insufficiency), known or suspected coronary artery disease, moderate or severe valvular heart disease, atrial fibrillation or atrial flutter, anemia and suboptimal echocardiographic images were excluded from the study. During each pacing period, blood samples were taken for measurement of brain natriuretic peptide (BNP) levels, telemetric and echocardiographic evaluations were performed to all patients. Also peak systolic global longitudinal strain (PSGLS) was calculated by using AFI method.
Results: The baseline clinical and echocardiographic data of the patients are presented in Table 1. No significant differences except for left ventricular outflow tract-velocity time integral (LVOT-VTI) were observed in pulse wave Doppler parameters with different AV delay times. LVOT-VTI values, PSGLS and BNP levels were better with 150 and 200 ms AV delay times when compared to 100 ms (for 100-150 ms: 0,017, and for 100-200 ms p:0,013; for 100-150 ms and for 100-200 ms p<0,001; for 100-150 ms p:0,001, and for 100-200 ms p:<0,001 respectively) (Table 2 and 3).

Our results showed that there were no significant changes on LV diastolic functions by the setting AV delay. In addition, when AV delay prolonged in physiological limits, BNP level was decreased and PSGLS and LVOT-VTI values were increased.
Conclusion: In patients with implanted DDD pacemaker and preserved left ventricular systolic function, increasing AV delay time has beneficial effects on left ventricular systolic performance in acute phase, without deteriorating diastolic function, as shown by AFI method in our study.

Table 1. Baseline clinical and echocardiographic data of the patients

Parameters	
Age (mean ± SD), years	64,3±10,9
Gender	
Male, (%)	19 (47,5)
Female, (%)	21 (52,5)
Hypertension, (%)	25 (62,5)
Diabetes mellitus, (%)	12 (30)
Hyperlipidemia, (%)	8 (20)
Cigarette, (%)	2 (5)
Pacing period, months	18,8±11,5
Left ventricular EF, %	61,5±6,0
LVEDd, mm	46,3±3,4
LVESd, mm	30,5±2,9
Left atrium, mm	35,3±3,1
Interventricular septum, mm	10,1±2,3
Posterior wall, mm	9,4±2,2

SD= standard deviation, EF= ejection fraction, LVEDd= left ventricule end-diastolic diameter, LVESd= left ventricule end-systolic diameter

Table 2. Pulse wave Doppler parameters on different AV delay times

	100 ms	150 ms	200 ms	p overall
E, m/sn	0,51 (0,3-0,8)	0,58 (0,3-0,9)	0,54 (0,3-0,8)	0,72
A, m/sn	0,82 (0,4-1,3)	0,84 (0,5-1,3)	0,84 (0,4-1,3)	0,27
E/A	0,67 (0,43-1,5)	0,67 (0,5-1,29)	0,67 (0,45-1,5)	0,43
IVRT, ms	109,3±14,0	113,6±17	113,6±19,2	0,10

AV=atrioventricular, E= early diastolic peak flow velocity, A= late diastolic peak flow velocity, E/A= the ratio of early and late diastolic peak flow velocity, IVRT=isovolumetric relaxation time

Table 3. BNP, PSGLS, LVOT-VTI values at different AV delay times

	100 ms	150 ms	200 ms	p Overall	p 100-150 ms	p 100-200 ms	p 150-200 ms
BNP, mg/dl	43,7 (5,4-95)	34,7 (5,1-85,3)	29,5 (8,4-94,6)	0,017	0,001	<0,001	0,082
PSGLS, %	12,6±1,7	14,6±2,3	15,5±2,6	<0,001	<0,001	<0,001	0,095
LVOT-VTI, cm	23,1±3,6	24,4±4,1	24,4±4,0	0,002	0,017	0,013	1,00

BNP= brain natriuretic peptide, PSGLS= peak systolic global longitudinal strain, LVOT-VTI= left ventricule outflow tract-velocity time index, AV= atrioventricular